

Valley Center Rite Aid

Traffic Impact Study

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1 INTRODUCTION

This traffic study evaluates the traffic conditions associated with the proposed “Valley Center Rite Aid” project (herein referred to as “the project”) located on the southeast corner of the Cole Grade Road and Valley Center Road intersection within the Valley Center Community of San Diego County. **Figure 1-1** illustrates the location of the project.

1.1 Project Description

A restaurant currently occupies the site and has driveway access to the property provided off of Cole Grade Road. The project proposes to demolish the existing restaurant and construct an 11,900 square foot (sf) Rite Aid, including a drive thru pharmacy window. Access will be provided at the existing driveway located off of Cole Grade Road (full access) and a new driveway located off of Valley Center Road, that will be restricted to right-in, right-out movements. Both of the driveways will be unsignalized. **Figure 1-2** illustrates the project site plan.

1.2 Study Area

Due to the net increase in traffic generated by the project (described in detail in Section 4.2), the project study area focuses on the Cole Grade Road & Valley Center Road intersection and the project driveways.

The site was also evaluated to determine if a roadway segment analysis would be needed. The existing use currently generates approximately 624 trips per day. The proposed use is forecast to generate 1,071 trips per day resulting in a net increase of 447 trips per day. Based on trip distribution patterns, 20% of the new trips (90 trips) are forecast to travel north of Valley Center Road on Cole Grade Road. Another 30% (134 trips) are forecast to travel east of the site on Valley Center Road. The remaining 50% of new trips (224 trips) are forecast to travel west of the site on Valley Center Road. **Table 1-1** summarizes the existing average daily traffic (ADT) project trips and levels of service (LOS) for roadway segments in the study area.

Table 1-1
Existing Roadway Conditions and Forecast Project Trips

Segment	Existing Class	Existing ADT ⁽¹⁾	Existing LOS	Project Trips
Cole Grade Road North of Valley Center	Light Collector (2.2 C)	10,660	LOS D	90
Valley Center Road East of Cole Grade Road	Light Collector (2.2 B)	11,490	LOS D	134
Valley Center Road West of Cole Grade Road	4In Major (4.1A)	22,440	LOS B	224

⁽¹⁾ Source: Lilac Hills Ranch Traffic Impact Study (Chen Ryan Associates, 2014)

Note: Roadway segment is significantly impacted if project results in an increase in ADT as follows:

@ LOS E	+200 ADT on a 2In Road	OR +400 ADT on a 4In Road
@ LOS F	+100 ADT on a 2In Road	OR +400 ADT on a 4In Road



According to Table 1 of the County Traffic “Report Format and Content Requirements” (August 2011), the net change in ADT of 447 vehicles per day corresponds to an “Issues Specific TIA.” Section 2.1.1 of the County “Report Format and Content Requirements” document states that “Typically the scope of an issues specific traffic study is limited to nearby roads receiving over 200 ADT (100 ADT if LOS F).” As shown in **Table 1-1** above, all segments operate at LOS D or better and project trips fall below the 200 ADT threshold. Although Valley Center Road west of Cole Grade Road is forecast to receive over 200 vpd from the project, the existing LOS A condition would not be impacted by the proposed project. Based on this assessment, roadway segments were not included in the traffic report.

The limited study area was agreed to by County staff.

1.3 Study Scenarios

The following study scenarios are evaluated in this traffic study:

- Existing Conditions: This scenario reflects the conditions on the ground today with traffic volume data obtained in June 2015.
- Existing Conditions Plus Project: This scenario reflects existing conditions with the addition of project traffic.

Valley Center Rite Aid



Figure 1-1
Project Study Area

Valley Center Rite Aid

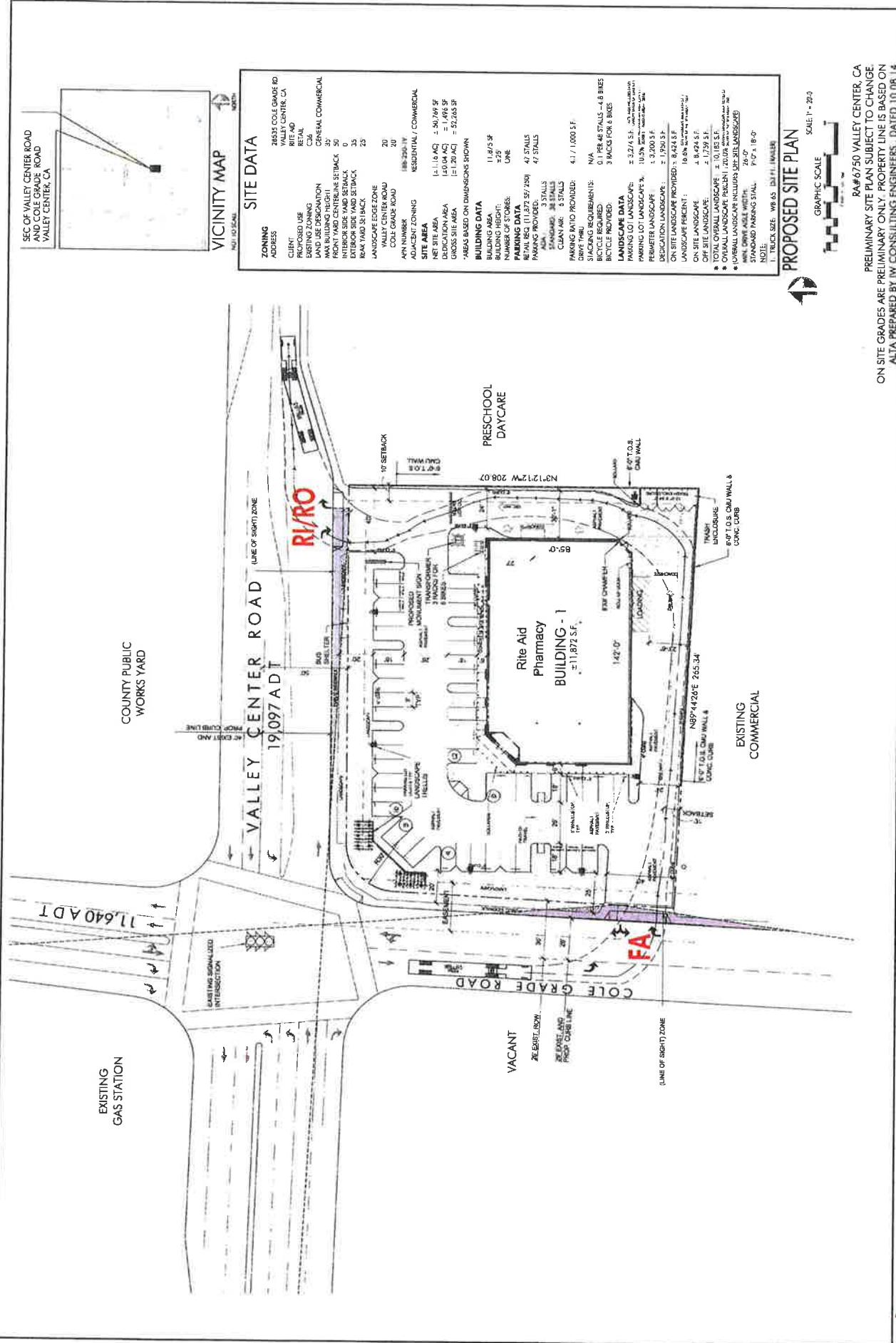


Figure 1-2
Site Plan



2 ANALYSIS APPROACH AND METHODOLOGY

This section summarizes the analysis approach and methodology used to evaluate the study intersection and project driveways associated with the proposed project.

2.1 Intersection Delay Analysis

Levels of service (LOS) were determined at the study area intersections for the AM and PM peak hours. The AM intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 7:00 AM and 9:00 AM. The PM intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 4:00 PM and 6:00 PM.

Signalized and unsignalized intersection operations were analyzed with Synchro 8 software (Trafficware). Synchro 8 uses the methodologies outlined in the *2000 Highway Capacity Manual (HCM)*.

Signal timing data and parameters such as cycle lengths, splits, and clearance intervals, were obtained from the current signal timing sheets provided by the County and calibrated into the Synchro model. Synchro reports delays, which correspond to a particular LOS, to describe the overall operation of an intersection. The criteria for the LOS grade designations are provided in **Table 2-1**. Within the County of San Diego, the threshold for acceptable operating conditions at signalized and unsignalized intersections is at LOS D or better.



Table 2-1
LOS Criteria for Intersections

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections	Unsignalized Intersections	
A	≤ 10	≤ 10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤ 20	>10 and ≤ 15	Operations with good progression but with some restricted movements.
C	>20 and ≤ 35	>15 and ≤ 25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤ 55	>25 and ≤ 35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and ≤ 80	>35 and ≤ 50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

2.2 Significance Criteria

The *County of San Diego Guidelines for Determining Significance, Traffic and Transportation, Second Modification, August 24, 2011*, was developed to evaluate the significance of traffic impacts in regards to requiring mitigation in the study area. **Table 2-2** summarizes the significance thresholds for intersections.

Table 2-2
Significance Thresholds at Intersections

LOS	Allowable Increase at Intersections	
	Signalized	Unsignalized
E	Delay of 2 seconds or less	20 peak-hour trips on a critical movement
F	Delay of 1 second, or 5 peak-hour trips on a critical movement	5 peak-hour trips on a critical movement

Notes:

A critical movement is one that is experiencing excessive queues, typically operating at LOS F.

By adding proposed project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.



3 EXISTING CONDITIONS

This section summarizes the existing roadway network, peak-hour traffic volumes, and operations at the study area intersection.

3.1 Roadway Network

Cole Grade Road is classified as a 2-Lane Light Collector Circulation Element roadway and runs in the north-south direction through the study area. From Valley Center to Fruitvale Road, the General Plan Mobility Element classification for Cole Grade Road is a Boulevard (4.2B). South of Valley Center, Cole Grade Road is not a Mobility Element classified roadway. Currently, sidewalks are provided on the east side of the roadway.

North of Valley Center Road, Cole Grade Road is constructed with one travel lane in each direction with a center two-way left-turn lane. The dedicated turn lanes at the intersection with Valley Center as well as the three lanes north of the intersection, result in an existing functional Light Collector (2.2C) classification. Sidewalks are provided on the east side of the roadway. The posted speed limit in the vicinity of the project is 45 mph.

Valley Center Road is a Mobility Element roadway and classified as a 4-Lane Major Road (4.1 A) with a raised median west of Cole Grade Road. Intermittent sidewalks are provided on the south side of the roadway with a posted speed limit of 45 mph. East of Cole Grade Road, Valley Center Road transitions to a two-lane roadway and is classified as a 2.2B Light Collector.

Figure 3-1 illustrates the existing geometrics at the study intersection.

3.2 Traffic Volumes

Traffic volumes at the Cole Grade Road & Valley Center Road intersection were obtained on June 23, 2015 for the AM peak period (7:00 AM to 9:00 AM) and PM peak period (4:00 PM to 6:00 PM) during typical weekday conditions when summer school was in session. Although the peak hour count data included in this TIA are approximately two years old, it is our professional opinion that the data used in this analysis is still valid. **Figure 3-2** illustrates the peak-hour traffic volumes at the Cole Grade Road & Valley Center Road intersection.

Traffic counts were also obtained at the existing project driveway. A Corner Skillet fast-food restaurant currently operates on site. Traffic volume data for the project driveway were collected on two separate days (September 23, 2015 and October 14, 2015). **Table 3-1** summarizes the existing driveway counts. As shown in the table, the existing site generates an average of 624 daily trips with 24 and 65 trips in the AM and PM peak-hour, respectively. **Appendix A** contains a copy of the count data sheets.

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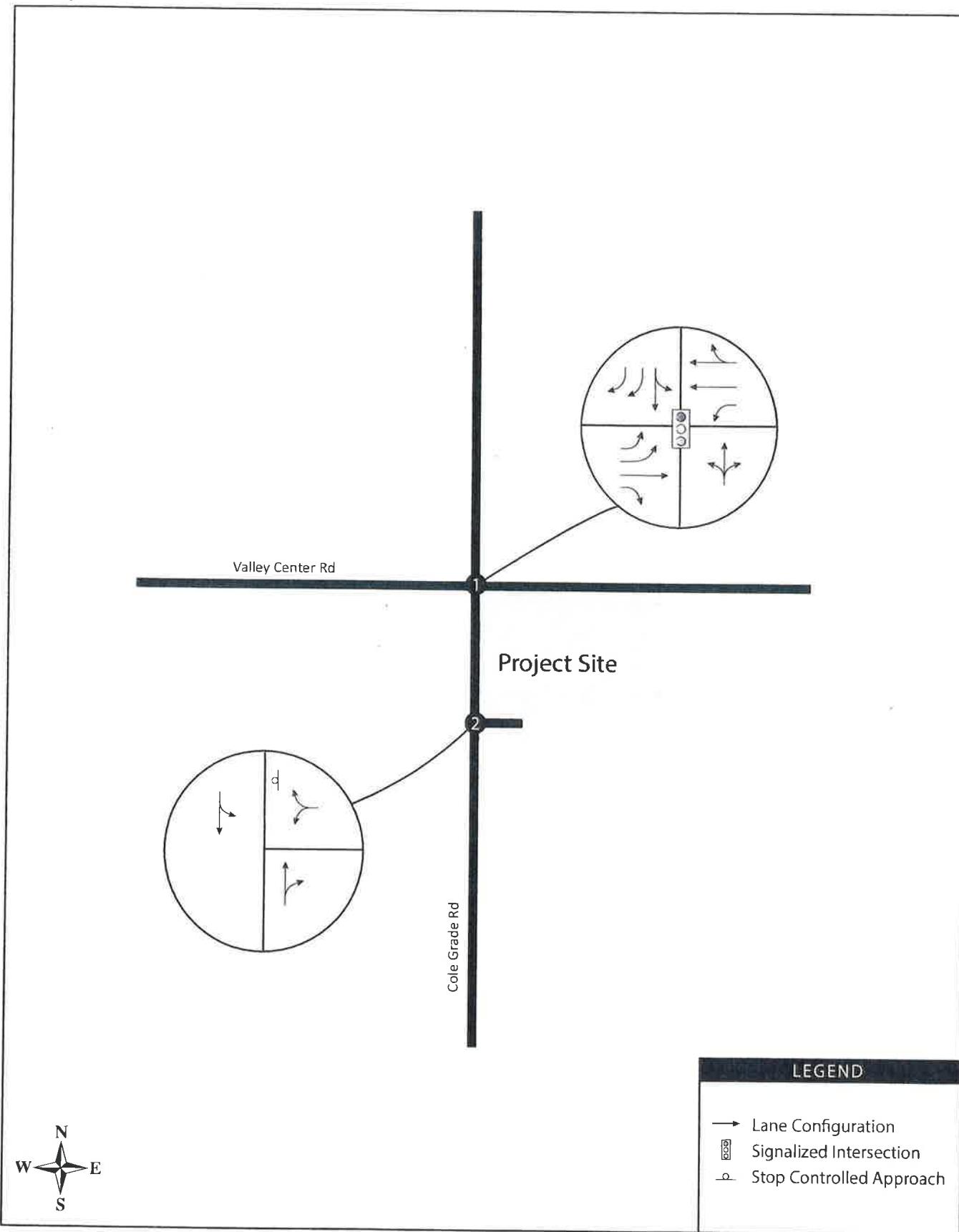


Figure 3-1
Existing Intersection Geometrics

Valley Center Rite Aid

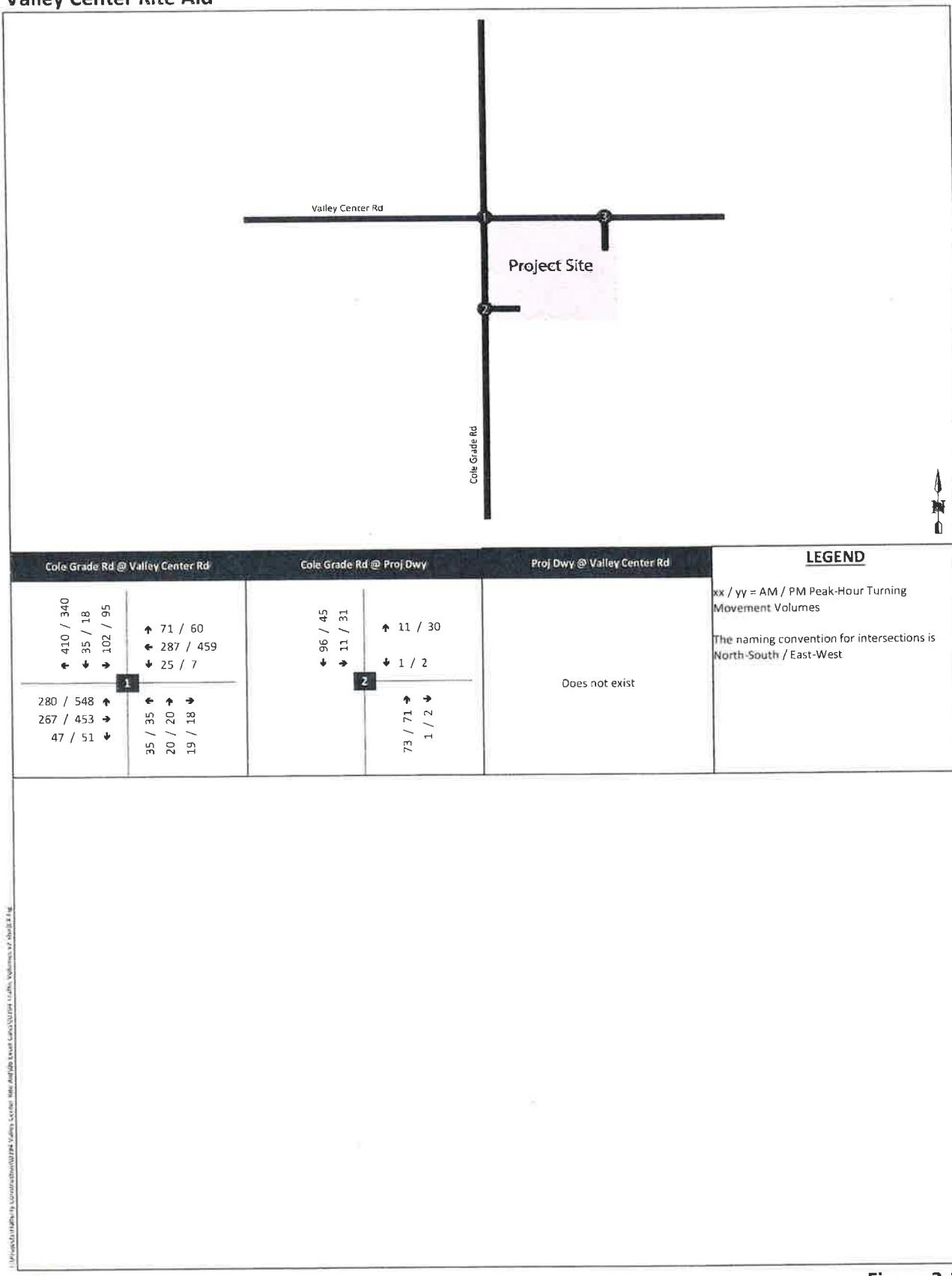


Figure 3-2
Existing Traffic Volumes



Table 3-1
Traffic Volumes at Existing Driveways

Date	ADT			AM			PM		
	In	Out	Total	In	Out	Total	In	Out	Total
23-Sep	317	317	634	15	11	26	33	31	64
14-Oct	307	307	614	8	13	21	33	32	65
AVERAGE	312	312	624	12	12	24	33	32	65

3.3 Intersection Analysis

Table 3-2 displays the findings of the Existing Condition LOS analysis. As shown in the table, the Cole Grade Road & Valley Center Road intersection operates at an acceptable LOS C or better during both peak-hours. The existing driveway for the Corner Skillet located on Cole Grade Road operates at LOS A.

Appendix B contains the intersection LOS worksheets.

Table 3-2
Existing Peak-Hour Intersection LOS Summary

#	Intersection	Traffic Control	Peak Hour	Delay (a)	LOS (b)
1	Cole Grade Rd & Valley Center Rd	Signal	AM	21.0	C
			PM	25.3	C
2	Cole Grade Rd & Proj Dwy	OWSC	AM	8.8	A
			PM	8.9	A
3	Proj Dwy & Valley Center Rd	OWSC	AM	DNE	
			PM		

Notes:

DNE: Does not exist

Signal: Traffic Signal, OWSC: One-Way Stopped Control

(a) Delays are reported as the average control delay for the entire intersection at signalized intersections and the worst movement at unsignalized intersections.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.



4 PROJECT TRAFFIC

This section describes the proposed project, estimated trip generation, trip distribution, and assignment of trips to the adjacent roadway network.

4.1 Project Description

The project site is currently occupied by a fast food restaurant that takes access from a single driveway on Cole Grade Road. The project proposes to demolish the existing restaurant and construct an 11,900 square foot (sf) Rite Aid, including a drive thru pharmacy window. The proposed project will take access from the existing driveway located off of Cole Grade Road (full access driveway) and a new driveway located off of Valley Center Road (restricted to right-in, right-out movements). The full access driveway will be relocated to the southern end of the property to allow for additional storage of queued vehicles at Valley Center Road. Both of the driveways will be unsignalized.

4.2 Project Trip Generation

Trip generation rates published by the *SANDAG Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002 were applied to the proposed project to determine the traffic generation characteristics of the site, as summarized in **Table 4-1**. The project is forecast to generate approximately 1,071 average weekday trips, including 43 and 107 trips during the AM and PM peak-hours, respectively.

As discussed previously in Table 3-1, 624 vehicles per day current enter and exit the project site due to the operations of the existing, occupied restaurant on the site. As a result, the net new trips per day added to the roadway network is 447 vehicles per day.

Table 4-1
Trip Generation Summary

TRIP GENERATION RATES								
Land Use	Rate	AM PEAK			PM PEAK			
		% of ADT	In:Out Ratio	% of ADT	In:Out Ratio			
Drugstore	90 Trips / ksf	4%	0.60 : 0.40	10%	0.50 : 0.50			
TRIP GENERATION CALCULATIONS								
Land Use	Amount	ADT	AM PEAK			PM PEAK		
			In	Out	Total	In	Out	Total
Rite Aid	11.9 ksf	1,071	26	17	43	54	53	107

Notes:

The trip rates for the proposed uses are based on *SANDAG's Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002*.

The existing restaurant on site generates approximately 624 trips per day. Therefore, the net increase in trips from the project site is 447 vehicles per day. To maintain a conservative analysis in this TIA, the peak hour analysis included in the TIA does not remove the existing trips generated prior to adding the trips shown in this table.



4.3 Project Trip Distribution

The project trip distribution was developed based on existing travel patterns, access to major road networks, and on similar projects in the study area. The following list shows the general trip distribution assumed to and from the project site:

Cole Grade Road

- 20 percent to/from the north

Valley Center Road

- 30 percent to/from the east
- 50 percent to/from the west

Figure 4-1 displays the trip distribution patterns at the Cole Grade Road & Valley Center Road intersection and project driveways. The existing Corner Skillet trips were removed from the existing traffic volumes at the Cole Grade Road & Valley Center Road intersection based on the same distribution patterns as the project.

4.4 Project Trip Assignment

Based on the project trip distribution and AM/PM peak hour project trip generation, project trips were assigned to the Cole Grade Road & Valley Center Road intersection and project driveways as displayed in **Figure 4-2**.

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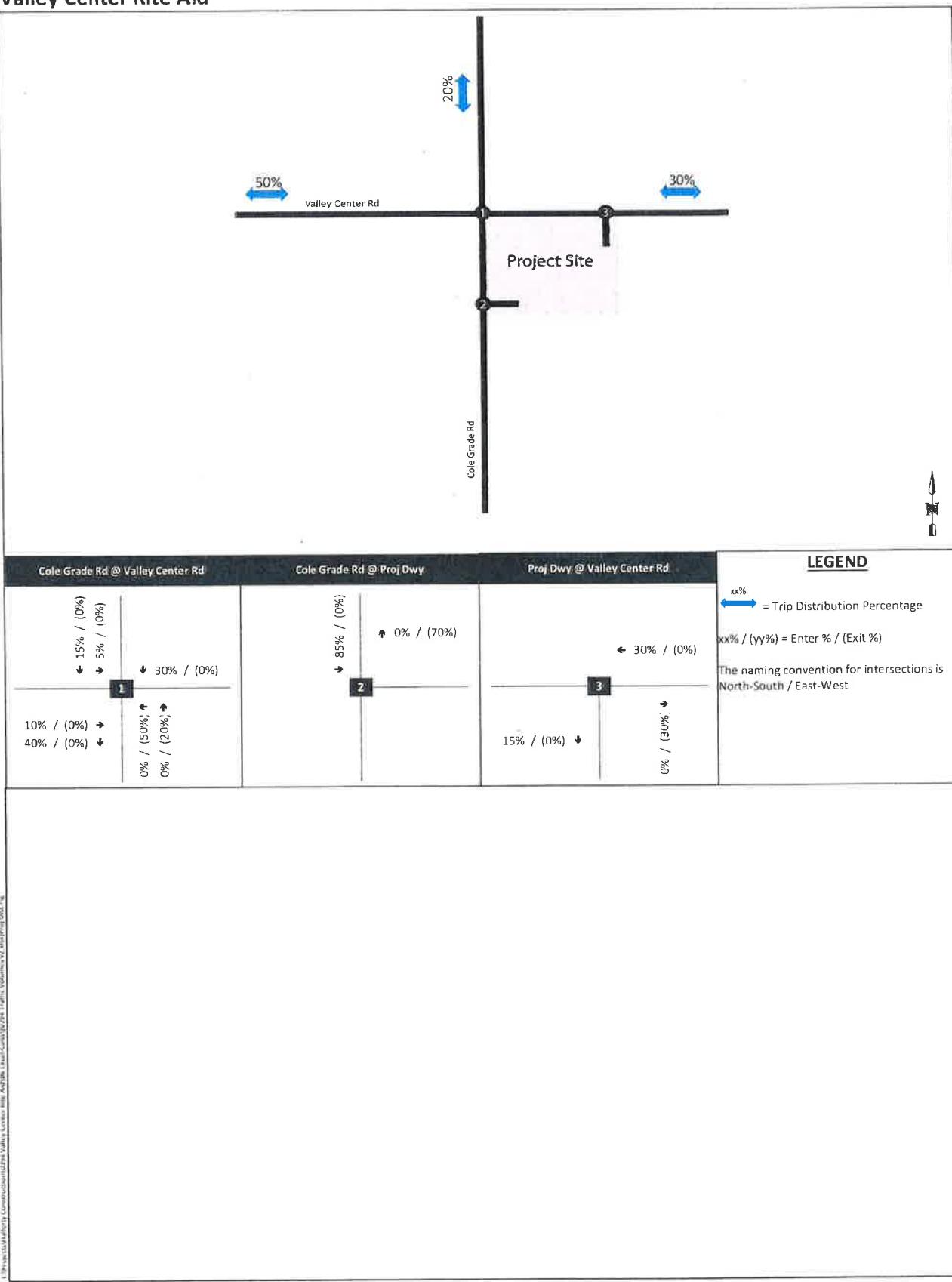


Figure 4-1
Project Trip Distribution

Valley Center Rite Aid

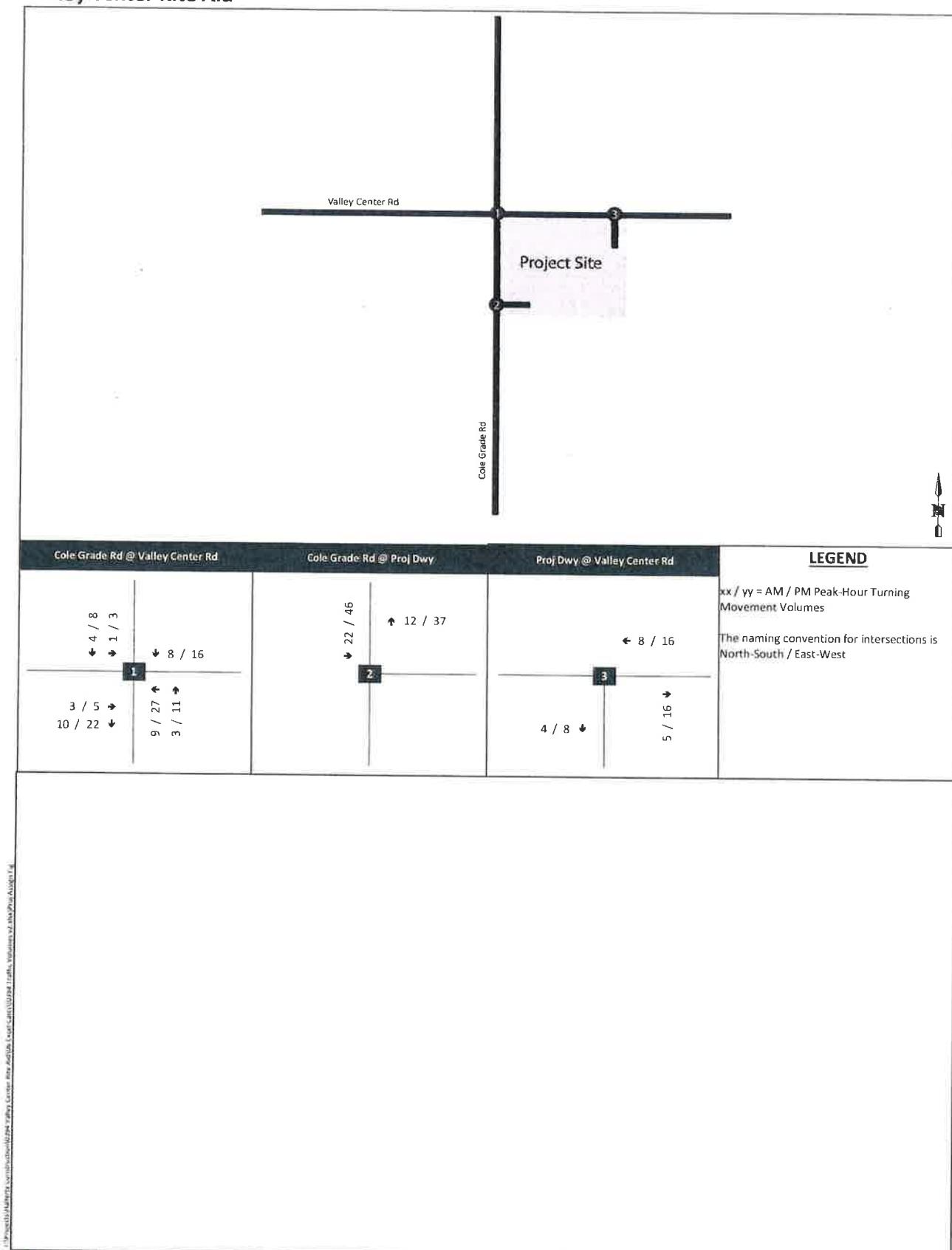


Figure 4-2
Project Trip Assignment



5 EXISTING PLUS PROJECT CONDITIONS

This section provides a summary of operations at the Cole Grade Road & Valley Center Road intersection and project driveways with the addition of project traffic.

5.1 Roadway Network

The project will construct two new driveways serving access to the project site. One driveway is located on the southern end of the property along Cole Grade Road providing additional storage for queued vehicles at Valley Center Road and will be a full service unsignalized intersection. This driveway would replace the existing driveway serving the Corner Skillet. The other driveway is located on the eastern end of the property along Valley Center Road and will be restricted to right-in, right-out movements only. **Figure 5-1** illustrates the existing geometrics with the project at the Cole Grade Road & Valley Center Road intersection and project driveways.

5.2 Traffic Volumes

Figure 5-2 illustrates the Existing Plus Project peak-hour traffic volumes at the Cole Grade Road & Valley Center Road intersection and project driveways.

5.3 Intersection Analysis

Table 5-1 displays the LOS analysis results under the Existing Plus Project scenario. As shown in the table, Cole Grade Road & Valley Center Road intersection and project driveways are expected to operate at an acceptable LOS C or better with the addition of project traffic during both the AM and PM peak hours. As a result, the project does not result in any significant impacts and mitigation is not required. **Appendix B** contains the intersection LOS worksheets.

Table 5-1
Existing Plus Project Peak Hour Intersection LOS Summary

#	Intersection	Traffic Control	Peak Hour	Existing Conditions		Existing Plus Project		Δ in Delay	Proj Trips Added	Sig? (c)
				Delay (a)	LOS (b)	Delay (a)	LOS (b)			
1	Cole Grade Rd & Valley Center Rd	Signal	AM	21.0	C	21.2	C	0.2	38	No
			PM	25.3	C	25.9	C	0.6	92	No
2	Cole Grade Rd & Proj Dwy	OWSC	AM	8.8	A	8.7	A	-0.1	34	No
			PM	8.9	A	8.8	A	-0.1	83	No
3	Proj Dwy & Valley Center Rd	OWSC	AM	DNE		10.7	B	10.7	17	No
			PM			12.8	B	12.8	40	No

Notes:

DNE: Does not exist

Signal: Traffic Signal, OWSC: One-Way Stopped Control

(a) Delays are reported as the average control delay for the entire intersection at signalized intersections and the worst movement at unsignalized intersections.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* (HCM) and performed using Synchro 8.

(c) Project impact is considered to be significant per the significance criteria shown in Table 2-2.

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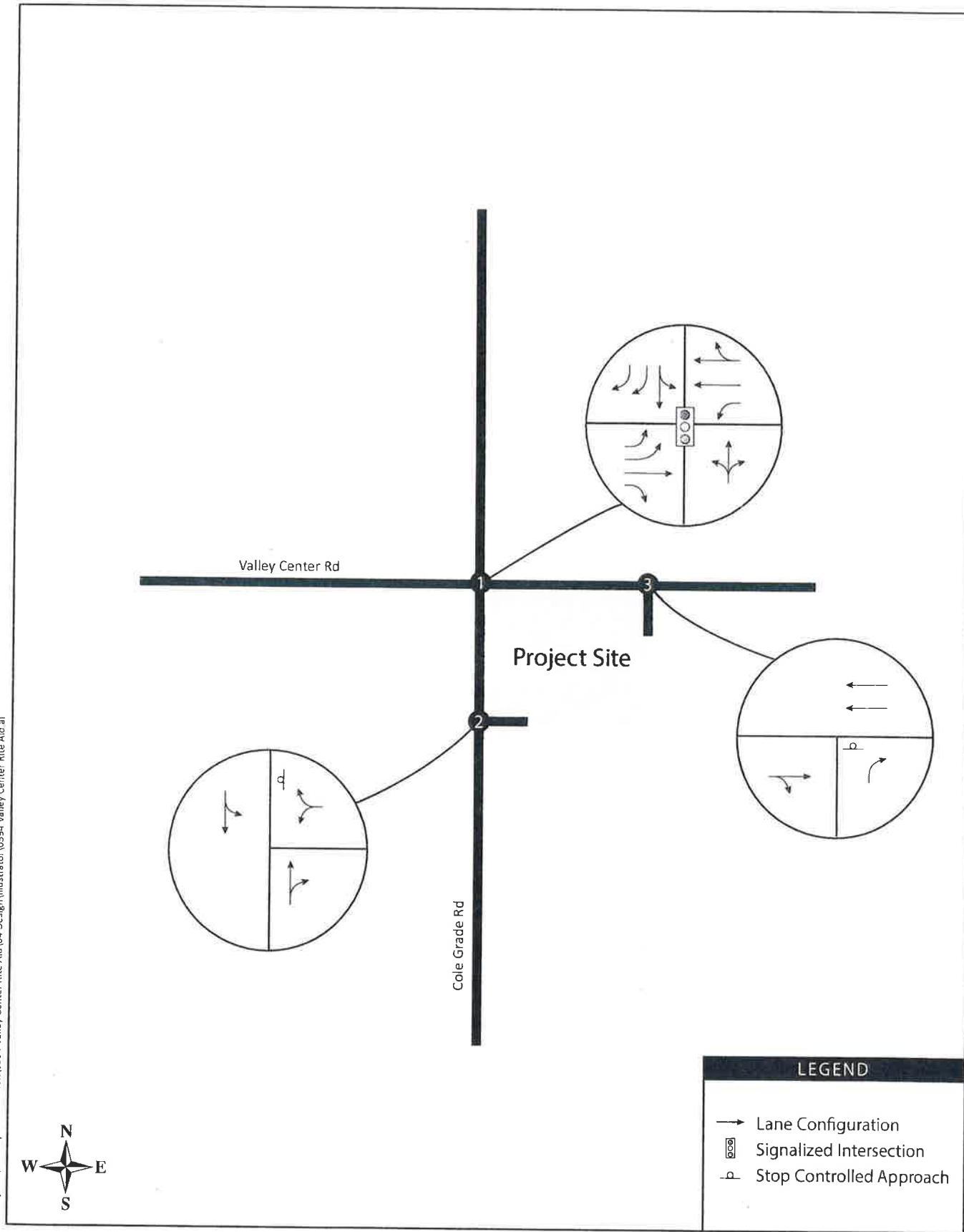


Figure 5-1
Existing Plus Project Intersection Geometrics

Valley Center Rite Aid

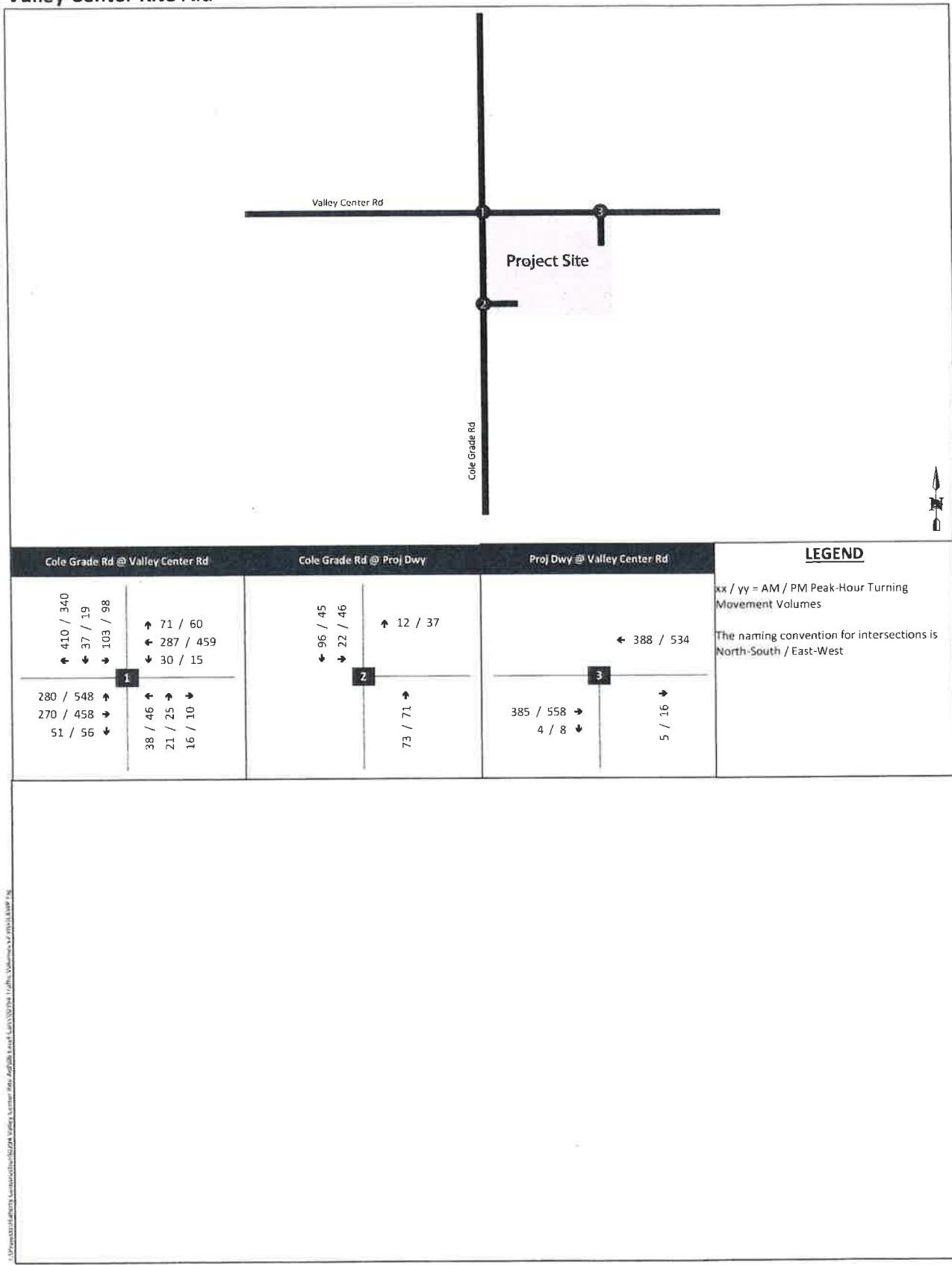


Figure 5-2
Existing Plus Project Traffic Volumes



6 MITIGATION MEASURES

As shown in this traffic study, the study intersection are forecast to operate at acceptable levels of service without and with the project. Therefore, no direct project impacts are forecast to occur.

The County of San Diego has developed an overall programmatic solution addressing forecast future road deficiencies in the unincorporated portions of the County. This program includes adoption of a TIF program to fund improvements to intersections and roadways necessary to mitigate potential cumulative impacts caused by traffic from future development.

Since project traffic will be distributed onto Cole Grade Road and Valley Center Road, both of which are Circulation Element roadways that were analyzed by the TIF program, the project will be required to participate in the TIF program. The County Board of Supervisors adopted the County of San Diego TIF program in April 2005. The latest TIF Ordinance Update was adopted by the Board of Supervisors effective on December 31, 2012. Actual traffic impact fees associated with the project are subject to change as the TIF ordinance is updated annually as the fees are adjusted to reflect the engineering cost index. Compliance with the TIF ordinance mitigates cumulative impact that the project has on County roadway facilities located within the Valley Center community and the North TIF region.



7 FINDINGS AND RECOMMENDATIONS

The following list provides a summary of the key findings for the project:

- The project is estimated to result in a net increase of approximately 447 average weekday trips when compared to existing project site conditions. The net increase in trips includes 19 and 44 trips during the AM and PM peak-hours, respectively.
- The existing site containing a restaurant use generates 624 average weekday trips, including 24 and 65 trips during the AM and PM peak-hours, respectively.
- The Cole Grade Road & Valley Center Road intersection, including the project driveways, are forecast to operate at an acceptable LOS C or better during the AM and PM peak-hours with the addition of project traffic. No mitigation is required.

Based on the key findings listed above, the following is a recommendation for the project:

- The project will contribute towards the County's TIF program to mitigate cumulative impacts.

Appendix A

Traffic Volume Data

VOLUME

Northerly Side Exit driveway on Cole Grade Rd

Day: Wednesday
Date: 9/23/2015

City: Valley Center
Project #: CA15_4286_001

DAILY TOTALS				NB 0	SB 0	EB 32	WB 285					Total 317
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
0.00			0	0	0	12:00			1	9	10	
0:15			0	0	0	12:15			2	12	14	
0:30			0	0	0	12:30			1	10	11	
0:45			0	0	0	12:45			0	4	7	
1:00			0	0	0	13:00			0	4	4	
1:15			0	0	0	13:15			2	7	9	
1:30			0	0	0	13:30			1	4	5	
1:45			0	0	0	13:45			0	3	4	
2:00			0	0	0	14:00			0	9	9	
2:15			0	0	0	14:15			0	5	5	
2:30			0	0	0	14:30			1	5	6	
2:45			0	0	0	14:45			0	1	20	
3:00			0	0	0	15:00			0	5	5	
3:15			0	0	0	15:15			0	6	6	
3:30			0	0	0	15:30			0	5	5	
3:45			0	0	0	15:45			0	1	17	
4:00			0	0	0	16:00			2	3	5	
4:15			0	0	0	16:15			0	5	5	
4:30			0	0	0	16:30			0	5	5	
4:45			0	0	0	16:45			0	2	18	
5:00			1	0	1	17:00			2	7	9	
5:15			0	0	0	17:15			0	9	9	
5:30			0	0	0	17:30			2	6	8	
5:45			0	1	1	17:45			0	4	31	
6:00			0	0	0	18:00			0	11	11	
6:15			0	0	0	18:15			0	6	6	
6:30			0	1	1	18:30			1	4	5	
6:45			1	1	2	18:45			0	1	28	
7:00			1	0	1	19:00			1	10	11	
7:15			0	0	0	19:15			0	5	5	
7:30			0	0	0	19:30			0	2	2	
7:45			0	1	2	19:45			0	1	21	
8:00			1	1	2	20:00			1	6	7	
8:15			0	4	4	20:15			0	4	4	
8:30			0	2	2	20:30			1	2	3	
8:45			0	1	2	20:45			2	4	16	
9:00			1	6	7	21:00			0	0	0	
9:15			1	3	4	21:15			0	1	1	
9:30			0	3	3	21:30			0	2	2	
9:45			0	2	3	21:45			0	1	4	
10:00			0	1	1	22:00			0	0	0	
10:15			0	5	5	22:15			0	0	0	
10:30			0	2	2	22:30			0	0	0	
10:45			1	1	3	22:45			0	0	0	
11:00			1	7	8	23:00			0	0	0	
11:15			2	5	7	23:15			0	0	0	
11:30			0	10	10	23:30			0	0	0	
11:45			2	5	10	23:45			0	0	0	
TOTALS			12	73	85	TOTALS			20	212	232	
SPLIT %			14.1%	85.9%	26.8%	SPLIT %			8.6%	91.4%	73.2%	
DAILY TOTALS				NB 0	SB 0	EB 32	WB 285					Total 317

AM Peak Hour	11:45	11:30	11:45	PM Peak Hour	12:00	12:00	12:00
AM Pk Volume	6	41	47	PM Pk Volume	4	38	42
Pk Hr Factor	0.750	0.854	0.839	Pk Hr Factor	0.500	0.792	0.750
7 - 9 Volume	2	11	13	4 - 6 Volume	6	49	55
7 - 9 Peak Hour	7:00	7:45	7:45	4 - 6 Peak Hour	16:45	17:00	17:00
7 - 9 Pk Volume	1	9	10	4 - 6 Pk Volume	4	31	35
Pk Hr Factor	0.250	0.563	0.625	Pk Hr Factor	0.500	0.851	0.972

VOLUME

Southerly Side Entry driveway on Cole Grade Rd

Day: Wednesday

Date: 9/23/2015

City: Valley Center
Project #: CA15_4286_002

DAILY TOTALS				NB 0	SB 0	EB 285	WB 32					Total 317
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
0:00			0	0	0	12:00			10	1	11	
0:15			0	0	0	12:15			14	0	14	
0:30			0	0	0	12:30			4	1	5	
0:45			0	0	0	12:45			5	33	35	
1:00		0	0	0	0	13:00			3	1	4	
1:15		0	0	0	0	13:15			3	0	3	
1:30		0	0	0	0	13:30			11	2	13	
1:45		0	0	0	0	13:45			5	22	27	
2:00		0	0	0	0	14:00			8	0	8	
2:15		0	0	0	0	14:15			7	3	10	
2:30		0	0	0	0	14:30			3	3	6	
2:45		0	0	0	0	14:45			4	22	30	
3:00		0	0	0	0	15:00			5	1	6	
3:15		0	0	0	0	15:15			8	0	8	
3:30		0	0	0	0	15:30			4	1	5	
3:45		0	0	0	0	15:45			4	21	23	
4:00		0	0	0	0	16:00			1	3	4	
4:15		0	0	0	0	16:15			4	1	5	
4:30		0	0	0	0	16:30			5	1	6	
4:45		0	0	0	0	16:45			9	19	24	
5:00		0	0	0	0	17:00			5	0	5	
5:15		0	0	0	0	17:15			6	0	6	
5:30		1	0	1	1	17:30			11	0	11	
5:45		1	2	0	1	17:45			7	29	29	
6:00		0	0	0	0	18:00			8	0	8	
6:15		1	0	1	1	18:15			3	0	3	
6:30		0	0	0	0	18:30			8	1	9	
6:45		1	2	0	1	18:45			10	29	31	
7:00		1	0	1	1	19:00			5	0	5	
7:15		1	0	1	1	19:15			4	0	4	
7:30		1	0	1	1	19:30			0	0	0	
7:45		0	3	0	0	19:45			6	15	15	
8:00		3	1	4	4	20:00			6	0	6	
8:15		3	0	3	3	20:15			2	1	3	
8:30		3	1	4	4	20:30			2	0	2	
8:45		5	14	0	16	20:45			1	11	12	
9:00		3	0	3	3	21:00			0	0	0	
9:15		1	0	1	1	21:15			0	0	0	
9:30		4	1	5	5	21:30			2	0	2	
9:45		3	11	1	13	21:45			1	3	3	
10:00		2	0	2	2	22:00			0	0	0	
10:15		4	0	4	4	22:15			0	0	0	
10:30		6	0	6	6	22:30			0	0	0	
10:45		6	18	1	19	22:45			0	0	0	
11:00		3	1	4	4	23:00			0	0	0	
11:15		9	1	10	10	23:15			0	0	0	
11:30		9	0	9	9	23:30			0	0	0	
11:45		10	31	0	33	23:45			0	0	0	
TOTALS		81	7	88	88	TOTALS			204	25	229	
SPLIT %		92.0%	8.0%	27.8%	27.8%	SPLIT %			89.1%	10.9%	72.2%	

DAILY TOTALS	NB 0	SB 0	EB 285	WB 32	Total 317		
AM Peak Hour	11:30	10:30	11:30	PM Peak Hour	12:00	14:15	13:30
AM Pk Volume	43	3	44	PM Pk Volume	33	9	38
Pk Hr Factor	0.768	0.750	0.786	Pk Hr Factor	0.589	0.750	0.731
7 - 9 Volume	17	2	19	4 - 6 Volume	48	5	53
7 - 9 Peak Hour	8:00	7:45	8:00	4 - 6 Peak Hour	16:45	16:00	16:45
7 - 9 Pk Volume	14	2	16	4 - 6 Pk Volume	31	5	31
Pk Hr Factor	0.700	0.500	0.800	Pk Hr Factor	0.705	0.417	0.705

VOLUME

Northerly Side Exit driveway on Cole Grade Rd

Day: Wednesday
 Date: 10/14/2015

City: Valley Center
 Project #: CA15_4320_001

DAILY TOTALS			NB 0	SB 0	EB 36	WB 272					Total 308
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
0:00			0	0	0	12:00			1	7	8
0:15			0	0	0	12:15			2	8	10
0:30			0	0	0	12:30			2	9	11
0:45			0	0	0	12:45			0	5	5
1:00			0	0	0	13:00			1	6	7
1:15			0	0	0	13:15			0	5	5
1:30			0	0	0	13:30			0	2	2
1:45			0	0	0	13:45			0	1	1
2:00			0	0	0	14:00			0	2	2
2:15			0	0	0	14:15			0	4	4
2:30			0	0	0	14:30			1	3	4
2:45			0	0	0	14:45			0	1	1
3:00			0	0	0	15:00			0	5	5
3:15			0	0	0	15:15			1	4	5
3:30			0	0	0	15:30			0	5	5
3:45			0	0	0	15:45			0	1	1
4:00			0	0	0	16:00			0	6	6
4:15			0	0	0	16:15			0	3	3
4:30			0	0	0	16:30			0	2	2
4:45			0	0	0	16:45			0	13	13
5:00			0	0	0	17:00			0	8	8
5:15			0	0	0	17:15			0	6	6
5:30			0	0	0	17:30			2	7	9
5:45			0	0	0	17:45			0	2	2
6:00			0	1	1	18:00			0	6	6
6:15			0	0	0	18:15			1	8	9
6:30			0	0	0	18:30			3	4	7
6:45	2	2	0	1	3	18:45			1	5	10
7:00			0	4	4	19:00			0	8	8
7:15			0	3	3	19:15			0	5	5
7:30			0	0	0	19:30			1	8	9
7:45	3	3	3	10	13	19:45			2	3	27
8:00			0	1	1	20:00			0	6	6
8:15			2	5	7	20:15			0	2	2
8:30			1	4	5	20:30			1	0	1
8:45	0	3	2	12	15	20:45			0	11	12
9:00			0	2	2	21:00			0	0	0
9:15			1	3	4	21:15			0	1	1
9:30			0	2	2	21:30			0	0	0
9:45	2	3	5	12	15	21:45			0	1	1
10:00			1	3	4	22:00			0	0	0
10:15			0	4	4	22:15			0	0	0
10:30			0	4	4	22:30			0	0	0
10:45	1	2	4	15	17	22:45			0	0	0
11:00			1	4	5	23:00			0	0	0
11:15			2	12	14	23:15			0	0	0
11:30			1	8	9	23:30			0	0	0
11:45	0	4	12	36	40	23:45			0	0	0
TOTALS			17	86	103	TOTALS			19	186	205
SPLIT %			16.5%	83.5%	33.4%	SPLIT %			9.3%	90.7%	66.6%

DAILY TOTALS			NB 0	SB 0	EB 36	WB 272	Total 308
AM Peak Hour	7:45	11:15	11:15				

AM Peak Hour	7:45	11:15	11:15	PM Peak Hour	12:00	18:45	12:00
AM Pk Volume	6	39	43	PM Pk Volume	5	30	34
Pk Hr Factor	0.500	0.813	0.768	Pk Hr Factor	0.625	0.833	0.773
7 - 9 Volume	6	22	28	4 - 6 Volume	2	42	44
7 - 9 Peak Hour	7:45	7:45	7:45	4 - 6 Peak Hour	16:45	17:00	17:00
7 - 9 Pk Volume	6	13	19	4 - 6 Pk Volume	2	29	31
Pk Hr Factor	0.500	0.650	0.679	Pk Hr Factor	0.250	0.906	0.861

VOLUME

Southerly Side Entry driveway on Cole Grade Rd

Day: Wednesday

Date: 10/14/2015

City: Valley Center

Project #: CA15_4320_002

DAILY TOTALS		NB 0	SB 0	EB 271		WB 35		Total 306
				EB	WB	TOTAL	PM Period	
0:00		0	0	0	0	0	12:00	10 0 10
0:15		0	0	0	0	0	12:15	5 1 6
0:30		0	0	0	0	0	12:30	8 2 10
0:45		0	0	0	0	0	12:45	6 29 2 5 8 34
1:00		0	0	0	0	0	13:00	7 1 8
1:15		0	0	0	0	0	13:15	6 1 7
1:30		0	0	0	0	0	13:30	6 1 7
1:45		0	0	0	0	0	13:45	6 25 1 4 7 29
2:00		0	0	0	0	0	14:00	2 1 3
2:15		0	0	0	0	0	14:15	4 3 7
2:30		0	0	0	0	0	14:30	3 2 5
2:45		0	0	0	0	0	14:45	5 14 1 7 6 21
3:00		0	0	0	0	0	15:00	4 0 4
3:15		0	0	0	0	0	15:15	3 0 3
3:30		0	0	0	0	0	15:30	5 0 5
3:45		0	0	0	0	0	15:45	4 16 0 4 16
4:00		0	0	0	0	0	16:00	2 0 2
4:15		0	0	0	0	0	16:15	4 0 4
4:30		0	0	0	0	0	16:30	4 0 4
4:45		0	0	0	0	0	16:45	7 17 2 2 9 19
5:00		0	0	0	0	0	17:00	8 0 8
5:15		0	0	0	0	0	17:15	7 1 8
5:30		0	0	0	0	0	17:30	9 2 11
5:45		2 2 0	2 2	2 2	2 2	2 2	17:45	7 31 0 3 7 34
6:00		0	0	0	0	0	18:00	6 1 7
6:15		0	0	0	0	0	18:15	5 2 7
6:30		0	0	0	0	0	18:30	6 0 6
6:45		3 3 0	3 3	3 3	3 3	3 3	18:45	8 25 0 3 8 28
7:00		0	0	0	0	0	19:00	4 0 4
7:15		0	0	0	0	0	19:15	8 0 8
7:30		1	0	1	1	1	19:30	11 0 11
7:45		4 5 1 1	5 6	5 6	5 6	5 6	19:45	5 28 0 5 28
8:00		2 1	3	3	3	3	20:00	1 2 3
8:15		3 1	4	4	4	4	20:15	0 1 1
8:30		2 0	2	2 0	2	2 0	20:30	1 0 1
8:45		2 9 0 2	2 11	2 11	2 11	2 11	20:45	1 3 0 3 1 6
9:00		0 0	0	0	0	0	21:00	0 0 0
9:15		3 0	3	3 0	3	3 0	21:15	0 0 0
9:30		3 0	3	3 0	3	3 0	21:30	1 0 1
9:45		3 9 0	3 9	3 9	3 9	3 9	21:45	0 1 0 0 0 1
10:00		2 0	2	2 0	2	2 0	22:00	0 0 0
10:15		3 0	3	3 0	3	3 0	22:15	0 1 1
10:30		8 1	9	8 1	9	8 1	22:30	0 0 0
10:45		7 20 0 1	7 21	7 21	7 21	7 21	22:45	0 0 1 0 0 1
11:00		8 0	8	8 0	8	8 0	23:00	0 0 0
11:15		8 2	10	8 2	10	8 2	23:15	0 0 0
11:30		10 1	11	10 1	11	10 1	23:30	0 0 0
11:45		8 34 0 3	8 37	8 37	8 37	8 37	23:45	0 0 0 0 0 0
TOTALS		82 7	89	TOTALS		189 28		217
SPLIT %		92.1%	7.9%	29.1%	SPLIT %		87.1% 12.9%	70.9%

DAILY TOTALS		NB 0	SB 0	EB 271		WB 35		Total 306
AM Peak Hour	11:15	7:30	11:15	PM Peak Hour	16:45	13:45	16:45	
AM Pk Volume	36	3	39	PM Pk Volume	31	7	36	
Pk Hr Factor	0.900	0.750	0.886	Pk Hr Factor	0.861	0.583	0.818	
7 - 9 Volume	14	3	17	4 - 6 Volume	48	5	53	
7 - 9 Peak Hour	7:45	7:30	7:45	4 - 6 Peak Hour	16:45	16:45	16:45	
7 - 9 Pk Volume	11	3	14	4 - 6 Pk Volume	31	5	36	
Pk Hr Factor	0.688	0.750	0.700	Pk Hr Factor	0.861	0.625	0.818	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:
6/23/15
TUESDAY

LOCATION:
NORTH & SOUTH:
EAST & WEST:

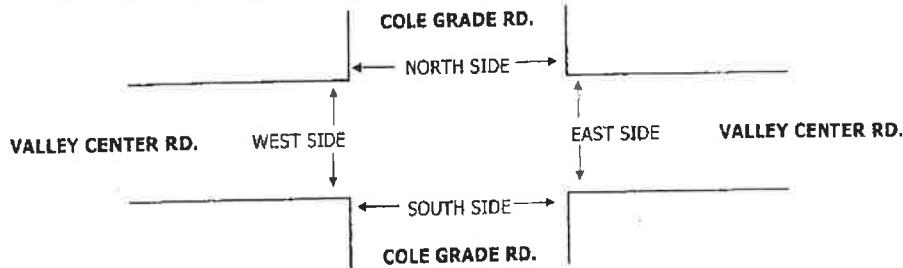
VALLEY CENTER RD.
COLE GRADE RD.
VALLEY CENTER RD.

PROJECT #: PDT15-0626-01
LOCATION #: 2
CONTROL: SIGNAL

NOTES:



	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	COLE GRADE RD.			COLE GRADE RD.			VALLEY CENTER RD.			VALLEY CENTER RD.			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	3	9	0	11	2	108	42	50	6	3	64	7	305
7:15 AM	7	6	3	9	4	100	45	45	9	4	83	12	327
7:30 AM	8	7	2	13	4	93	59	80	8	4	72	19	369
7:45 AM	11	3	4	24	9	112	84	69	12	9	72	26	435
8:00 AM	11	7	4	29	4	91	62	68	9	7	88	15	396
8:15 AM	5	4	6	23	10	117	67	61	13	3	74	15	398
8:30 AM	8	6	5	26	12	90	67	69	13	6	53	14	369
8:45 AM	17	10	6	19	7	107	91	66	10	8	55	20	416
VOLUMES	70	52	30	154	52	818	517	508	80	44	561	129	3,015
APPROACH %	46%	34%	20%	15%	5%	80%	47%	46%	7%	6%	76%	18%	
APP/DEPART	152	/	698	1,024	/	176	1,105	/	692	734	/	1,449	0
BEGIN PEAK HR	7:45 AM												
VOLUMES	35	20	19	102	35	410	280	267	47	25	287	71	1,598
APPROACH %	47%	27%	26%	19%	6%	75%	47%	45%	8%	7%	75%	19%	
PEAK HR FACTOR	0.841			0.912			0.900			0.863			0.918
APP/DEPART	74	/	371	547	/	107	594	/	388	383	/	732	0
4:00 PM	10	8	10	25	7	90	120	107	14	2	91	19	503
4:15 PM	10	12	1	28	6	83	111	105	15	7	97	10	485
4:30 PM	11	8	8	15	2	76	122	121	15	0	128	19	525
4:45 PM	2	4	3	25	10	78	148	114	12	5	96	14	511
5:00 PM	14	5	4	24	2	83	142	97	17	1	125	13	527
5:15 PM	8	3	3	31	4	103	136	121	7	1	110	14	541
5:30 PM	4	1	4	30	6	63	140	104	14	0	88	8	462
5:45 PM	10	6	6	17	6	64	150	106	11	5	65	11	457
VOLUMES	69	47	39	195	43	640	1,069	875	105	21	800	108	4,011
APPROACH %	45%	30%	25%	22%	5%	73%	52%	43%	5%	2%	86%	12%	
APP/DEPART	155	/	1,224	878	/	169	2,049	/	1,109	929	/	1,509	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	35	20	18	95	18	340	548	453	51	7	459	60	2,104
APPROACH %	48%	27%	25%	21%	4%	75%	52%	43%	5%	1%	87%	11%	
PEAK HR FACTOR	0.676			0.821			0.960			0.895			0.972
APP/DEPART	73	/	628	453	/	76	1,052	/	566	526	/	834	0



	COLE GRADE RD.			
	VALLEY CENTER RD.		COLE GRADE RD.	
AM			← NORTH SIDE →	
			↑	
		WEST SIDE		
		↓		
		EAST SIDE		
		↓		
		SOUTH SIDE		
PM			← SOUTH SIDE →	

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM				0
7:15 AM				0
7:30 AM				0
7:45 AM				0
8:00 AM				0
8:15 AM				0
8:30 AM				0
8:45 AM				0
TOTAL	0	0	0	0
4:00 PM				0
4:15 PM				0
4:30 PM				0
4:45 PM				0
5:00 PM				0
5:15 PM				0
5:30 PM				0
5:45 PM				0

PEDESTRIAN ACTIVATIONS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM				0
7:15 AM				0
7:30 AM				0
7:45 AM				0
8:00 AM				0
8:15 AM				0
8:30 AM				0
8:45 AM				0
TOTAL	0	0	0	0
4:00 PM				0
4:15 PM				0
4:30 PM				0
4:45 PM				0
5:00 PM				0
5:15 PM				0
5:30 PM				0
5:45 PM				0

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
7:00 AM				0
7:15 AM				0
7:30 AM				0
7:45 AM				0
8:00 AM				0
8:15 AM				0
8:30 AM				0
8:45 AM				0
TOTAL	0	0	0	0
4:00 PM				0
4:15 PM				0
4:30 PM				0
4:45 PM				0
5:00 PM				0
5:15 PM				0
5:30 PM				0
5:45 PM				0

Average Daily Traffic Volumes
Prepared by: Field Data Services of Arizona, Inc.

THURSDAY, SEPTEMBER 22 2011

CITY: VALLEY CENTER

PROJECT: CA11-0923-1752-008

COLE GRADE BTN FRUITVALE & VALLEY CENTER

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00	28	20			12:00	54	70			
00:15	21	19			12:15	55	54			
00:30	26	22			12:30	57	55			
00:45	19	94	15	76	170	12:45	62	228	67	246
01:00	12	11			13:00	68	61			
01:15	15	14			13:15	60	74			
01:30	11	10			13:30	69	70			
01:45	9	47	9	44	91	13:45	70	267	55	260
02:00	10	7			14:00	77	68			
02:15	5	5			14:15	74	60			
02:30	7	5			14:30	75	72			
02:45	8	30	4	21	51	14:45	67	293	51	251
03:00	5	1			15:00	65	55			
03:15	4	1			15:15	79	66			
03:30	2	5			15:30	84	70			
03:45	6	17	4	11	28	15:45	77	305	88	279
04:00	10	5			16:00	108	99			
04:15	15	6			16:15	121	138			
04:30	12	11			16:30	141	121			
04:45	18	55	15	37	92	16:45	125	495	168	526
05:00	22	10			17:00	138	80			
05:15	19	19			17:15	108	115			
05:30	25	26			17:30	90	92			
05:45	32	98	22	77	175	17:45	109	445	98	385
06:00	40	28			18:00	101	97			
06:15	51	35			18:15	90	105			
06:30	65	54			18:30	99	90			
06:45	100	256	88	205	461	18:45	70	360	75	367
07:00	138	121			19:00	84	84			
07:15	208	168			19:15	80	88			
07:30	77	215			19:30	65	65			
07:45	68	491	144	648	1139	19:45	51	280	74	311
08:00	55	138			20:00	55	70			
08:15	84	108			20:15	68	51			
08:30	70	90			20:30	54	44			
08:45	51	260	55	391	651	20:45	50	227	48	213
09:00	55	64			21:00	40	51			
09:15	68	66			21:15	44	52			
09:30	60	51			21:30	35	35			
09:45	42	225	48	229	454	21:45	38	157	28	166
10:00	55	51			22:00	31	22			
10:15	50	55			22:15	28	19			
10:30	41	50			22:30	22	25			
10:45	48	194	68	224	418	22:45	26	107	20	86
11:00	44	66			23:00	27	19			
11:15	68	60			23:15	20	20			
11:30	66	72			23:30	19	16			
11:45	70	248	68	266	514	23:45	22	88	17	72
Total Vol.	2015	2229			4244		3252	3162		6414
									Daily Totals	
							NB	SB	EB	WB
							5267	5391		10658
										Combined
Split %	47.5%	52.5%			39.8%		50.7%	49.3%		60.2%
Peak Hour	06:45	07:15			07:00		16:15	16:00		16:15
Volume	523	665			1139		525	526		1092
P.H.F.	0.63	0.77			0.76		0.91	0.78		0.88

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

THURSDAY, SEPTEMBER 22 2011

CITY: VALLEY CENTER

PROJECT: CA11-0923-1752-010

VALLEY CENTER BTN LIZARD RACKS & COLE GRADE

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			12	12		12:00		66	70
00:15			5	18		12:15		68	74
00:30			6	11		12:30		70	84
00:45			5	28	10	51	79	12:45	81 285 88 316 601
01:00			13	9		13:00		75	74
01:15			5	7		13:15		70	85
01:30			1	2		13:30		82	88
01:45			2	21	1	19	40	13:45	88 315 74 321 636
02:00			1	2		14:00		75	80
02:15			0	1		14:15		70	81
02:30			1	0		14:30		82	88
02:45			1	3	1	4	7	14:45	87 314 95 344 658
03:00			2	1		15:00		91	105
03:15			1	5		15:15		88	111
03:30			0	4		15:30		98	115
03:45			1	4	5	15	19	15:45	104 381 109 440 821
04:00			2	6		16:00		101	131
04:15			4	7		16:15		151	128
04:30			5	15		16:30		162	151
04:45			11	22	11	39	61	16:45	168 582 162 572 1154
05:00			12	19		17:00		121	108
05:15			11	22		17:15		155	115
05:30			18	26		17:30		130	121
05:45			28	69	30	97	166	17:45	162 568 133 477 1045
06:00			33	35		18:00		151	134
06:15			35	41		18:15		132	131
06:30			40	54		18:30		141	118
06:45			51	159	88	218	377	18:45	108 532 106 489 1021
07:00			66	111		19:00		116	121
07:15			70	80		19:15		90	88
07:30			112	95		19:30		74	64
07:45			131	379	106	392	771	19:45	70 350 66 339 689
08:00			124	151		20:00		65	60
08:15			130	135		20:15		51	51
08:30			90	80		20:30		42	55
08:45			105	449	71	437	886	20:45	35 193 42 208 401
09:00			90	84		21:00		44	35
09:15			77	65		21:15		31	30
09:30			70	66		21:30		28	28
09:45			65	302	70	285	587	21:45	33 136 20 113 249
10:00			51	61		22:00		31	26
10:15			55	68		22:15		28	19
10:30			48	54		22:30		22	21
10:45			50	204	50	233	437	22:45	26 107 22 88 195
11:00			56	44		23:00		19	25
11:15			54	51		23:15		22	15
11:30			51	62		23:30		20	18
11:45			55	216	66	223	439	23:45	15 76 13 71 147
Total Vol.			1856	2013	3869			3839	3778 7617
							Daily Totals		
							NB	SB	EB WB Combined
									5695 5791 11486
									PM
Split %			48.0%	52.0%	33.7%				50.4% 49.6% 66.3%
Peak Hour			07:30	07:30	07:30				16:30 16:00 16:00
Volume			497	487	984				606 572 1154
P.H.F.			0.95	0.81	0.89				0.90 0.88 0.87

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

080609

Average Daily Traffic Volumes
Prepared by: Field Data Services of Arizona, Inc.

THURSDAY, SEPTEMBER 22 2011

CITY: VALLEY CENTER

PROJECT: CA11-0923-1752-011

VALLEY CENTER BTN COLE GRADE & MILLER

AM Period	NB	SB	EB	WB		PM Period	NB	SB	EB	WB	
00:00		44	38			12:00			154	141	
00:15		41	41			12:15			161	137	
00:30		34	44			12:30			166	133	
00:45		32	151	31	154	305			172	653	154 565 1218
01:00		33	35			13:00			151	158	
01:15		23	33			13:15			142	151	
01:30		19	23			13:30			162	162	
01:45		22	97	18	109	206			160	615	154 625 1240
02:00		16	18			14:00			157	150	
02:15		20	22			14:15			164	149	
02:30		18	16			14:30			166	132	
02:45		20	74	20	76	150			162	649	151 582 1231
03:00		25	28			15:00			170	168	
03:15		28	41			15:15			175	154	
03:30		31	44			15:30			184	160	
03:45		28	112	48	161	273			176	705	175 657 1362
04:00		33	54			16:00			191	180	
04:15		35	51			16:15			235	216	
04:30		40	68			16:30			268	235	
04:45		48	156	60	233	389			241	935	241 872 1807
05:00		41	68			17:00			229	205	
05:15		55	77			17:15			218	200	
05:30		51	90			17:30			225	191	
05:45		68	215	108	343	558			251	923	212 808 1731
06:00		99	118			18:00			226	184	
06:15		95	135			18:15			208	180	
06:30		108	141			18:30			212	187	
06:45		130	432	188	582	1014			201	847	162 713 1560
07:00		151	201			19:00			184	135	
07:15		168	189			19:15			177	144	
07:30		158	235			19:30			162	141	
07:45		192	669	169	794	1463			142	665	132 552 1217
08:00		177	215			20:00			135	100	
08:15		184	222			20:15			108	95	
08:30		152	199			20:30			115	90	
08:45		149	662	175	B11	1473			90	448	84 369 817
09:00		131	161			21:00			77	82	
09:15		128	154			21:15			76	62	
09:30		122	135			21:30			84	35	
09:45		135	516	133	583	1099			65	302	44 223 525
10:00		134	141			22:00			44	41	
10:15		148	128			22:15			51	35	
10:30		136	135			22:30			40	30	
10:45		127	545	144	548	1093			35	170	33 139 309
11:00		122	151			23:00			42	28	
11:15		141	152			23:15			37	26	
11:30		151	156			23:30			31	21	
11:45		142	556	142	601	1157			33	143	25 100 243
Total Vol.		4185	4995	9180					7055	6205	13260

	Daily Totals
NB	SB
EB	WB
Combined	

11240	11200
22440	

AM**PM**

45.6%	54.4% 40.9%
53.2%	46.8% 59.1%

Peak Hour	07:30 07:30 07:30
16:15	16:15 16:15

Volume P.H.F.	711 841 1552 0.93 0.89 0.96
973	897 1870 0.91 0.93 0.93

#080609

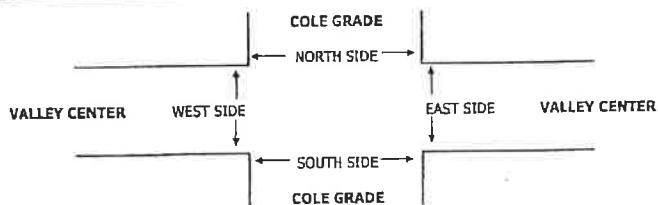
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 9/22/11 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST.	VALLEY CENTER COLE GRADE VALLEY CENTER	PROJECT #: CA11-0923-1752
			LOCATION #: 10 CONTROL: SIGNAL
NOTES:			

AM	LANES:	NORTHBOUND COLE GRADE			SOUTHBOUND COLE GRADE			EASTBOUND VALLEY CENTER			WESTBOUND VALLEY CENTER			TOTAL
		NL 0	NT 1	NR 0	SL 0.5	ST 0.5	SR 2	EL 2	ET 1	ER 1	WL 1	WT 2	WR 0	
		5	2	0	13	7	130	100	43	5	1	74	32	412
7:00 AM		10	2	1	39	2	121	121	37	12	2	54	27	428
7:15 AM		5	2	2	56	3	149	90	50	7	1	69	23	457
7:30 AM		5	3	5	43	10	92	88	84	13	3	75	30	451
7:45 AM		6	4	4	56	7	107	72	84	9	6	101	57	513
8:00 AM		8	4	6	40	5	111	85	88	7	6	78	33	471
8:15 AM		9	6	5	22	1	127	77	71	12	1	64	10	405
8:30 AM		7	5	3	28	3	101	69	75	8	1	60	15	375
VOLUMES		55	28	26	297	38	938	702	532	73	21	575	227	3,512
APPROACH %		50%	26%	24%	23%	3%	74%	54%	41%	6%	3%	70%	28%	
APP/DEPART		109	/	957	1,273	/	132	1,307	/	855	623	/	1,568	0
BEGIN PEAK HR		7:30 AM												1,892
VOLUMES		24	13	17	195	25	459	335	306	36	16	323	143	
APPROACH %		44%	24%	31%	29%	4%	68%	49%	45%	5%	3%	67%	30%	
PEAK HR FACTOR		0.750				0.816		0.915				0.735		0.922
APP/DEPART		54	/	491	679	/	77	677	/	518	402	/	806	0
PM	4:00 PM	10	5	5	22	9	85	112	82	11	5	104	19	469
	4:15 PM	11	2	5	35	6	101	109	102	13	5	89	17	495
	4:30 PM	8	3	10	42	5	105	137	102	13	3	111	29	568
	4:45 PM	13	8	11	44	8	121	132	95	9	4	121	22	588
	5:00 PM	11	13	6	27	4	86	125	98	15	5	86	22	498
	5:15 PM	10	7	6	41	7	88	109	107	13	7	95	26	516
	5:30 PM	7	8	3	32	4	94	114	97	8	2	100	12	481
	5:45 PM	9	10	5	38	5	95	121	115	11	6	106	18	539
VOLUMES		79	56	51	281	48	775	959	798	93	37	812	165	4,154
APPROACH %		42%	30%	27%	25%	4%	70%	52%	43%	5%	4%	80%	16%	
APP/DEPART		186	/	1,180	1,104	/	178	1,850	/	1,130	1,014	/	1,665	0
BEGIN PEAK HR		4:30 PM												2,170
VOLUMES		42	31	33	154	24	400	503	402	50	19	413	99	
APPROACH %		40%	29%	31%	27%	4%	69%	53%	42%	5%	4%	78%	19%	
PEAK HR FACTOR		0.828				0.835		0.947				0.903		0.923
APP/DEPART		106	/	633	578	/	93	955	/	589	531	/	855	0

U-TURNS				
NB	SB	EB	WB	TTL
X	X	X	X	
1	6			7
5				11
7	5			12
9	4			13
12	4			16
15	5			20
11	6			17
8	3			11
0	60	39	0	107



	7:00 AM
	7:15 AM
	7:30 AM
	7:45 AM
AM	8:00 AM
	8:15 AM
	8:30 AM
	8:45 AM
	TOTAL
	4:00 PM
	4:15 PM
	4:30 PM
	4:45 PM
	5:00 PM
	5:15 PM
	5:30 PM
	5:45 PM
PM	TOTAL

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

BICYCLE CROSSINGS				
HS	SS	ES	WS	TOTAL
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

Appendix B

Intersection LOS Worksheets

Valley Center Rite Aid
1: Cole Grade Rd & Valley Center Rd

Existing
Timing Plan: AM Peak

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑↑		↑↑		↑↑	↑↑	↑↑
Volume (vph)	280	267	47	25	287	71	35	20	19	102	35	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00	0.85	1.00	0.97			0.96			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3434			1756			1796	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.98			0.96	1.00
Satd. Flow (perm)	3433	1863	1583	1770	3434			1756			1796	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	290	51	27	312	77	38	22	21	111	38	446
RTOR Reduction (vph)	0	0	27	0	17	0	0	11	0	0	0	365
Lane Group Flow (vph)	304	290	24	27	372	0	0	70	0	0	149	81
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2									4
Actuated Green, G (s)	10.6	23.5	29.7	2.2	15.1			6.2			11.5	11.5
Effective Green, g (s)	10.6	23.5	29.7	2.2	15.1			6.2			11.5	11.5
Actuated g/C Ratio	0.17	0.37	0.47	0.03	0.24			0.10			0.18	0.18
Clearance Time (s)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.5	2.0	2.0			2.5			2.5	2.5
Lane Grp Cap (vph)	577	694	746	61	823			172			327	508
v/s Ratio Prot	c0.09	c0.16	0.00	0.02	0.11			c0.04			c0.08	
v/s Ratio Perm			0.01									0.03
v/c Ratio	0.53	0.42	0.03	0.44	0.45			0.41			0.46	0.16
Uniform Delay, d1	23.9	14.7	8.9	29.8	20.4			26.7			23.0	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	1.9	0.1			1.1			0.7	0.1
Delay (s)	24.3	14.8	8.9	31.7	20.6			27.8			23.7	21.8
Level of Service	C	B	A	C	C			C			C	C
Approach Delay (s)					21.3			27.8			22.3	
Approach LOS			B		C			C			C	
Intersection Summary												
HCM 2000 Control Delay				21.0		HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio				0.48								
Actuated Cycle Length (s)				63.0		Sum of lost time (s)		19.6				
Intersection Capacity Utilization				42.4%		ICU Level of Service		A				
Analysis Period (min)				15								
c Critical Lane Group												

Valley Center Rite Aid
1: Cole Grade Rd & Valley Center Rd

Existing
Timing Plan: PM Peak

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	60	35	20	18	95	18	340
Volume (vph)	548	453	51	7	459	60	35	20	18	95	18	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95			1.00			1.00	0.88
Fr _t	1.00	1.00	0.85	1.00	0.98			0.97			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3478			1758			1788	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.98			0.96	1.00
Satd. Flow (perm)	3433	1863	1583	1770	3478			1758			1788	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	596	492	55	8	499	65	38	22	20	103	20	370
RTOR Reduction (vph)	0	0	22	0	7	0	0	9	0	0	0	316
Lane Group Flow (vph)	596	492	33	8	557	0	0	71	0	0	123	54
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2									4
Actuated Green, G (s)	19.7	41.9	48.9	0.9	23.1			7.0			11.8	11.8
Effective Green, g (s)	19.7	41.9	48.9	0.9	23.1			7.0			11.8	11.8
Actuated g/C Ratio	0.24	0.52	0.60	0.01	0.28			0.09			0.15	0.15
Clearance Time (s)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.5	2.0	2.0			2.5			2.5	2.5
Lane Grp Cap (vph)	832	961	953	19	989			151			259	405
v/s Ratio Prot	c0.17	c0.26	0.00	0.00	0.16			c0.04			c0.07	
v/s Ratio Perm			0.02									0.02
v/c Ratio	0.72	0.51	0.03	0.42	0.56			0.47			0.47	0.13
Uniform Delay, d1	28.2	12.9	6.6	39.9	24.8			35.3			31.9	30.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.5	0.2	0.0	5.4	0.4			1.7			1.0	0.1
Delay (s)	30.7	13.1	6.6	45.3	25.2			37.0			32.9	30.3
Level of Service	C	B	A	D	C			D			C	C
Approach Delay (s)		21.9			25.5			37.0			31.0	
Approach LOS		C			C			D			C	

Intersection Summary

HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Valley Center Rite Aid
1: Cole Grade Rd & Valley Center Rd

Existing Plus Project
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	280	270	57	33	287	71	44	23	19	103	39	410
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Total Lost time (s)	0.97	1.00	1.00	1.00	0.95			1.00			1.00	0.88
Fr _t	1.00	1.00	0.85	1.00	0.97			0.97			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3434			1762			1797	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.98			0.96	1.00
Satd. Flow (perm)	3433	1863	1583	1770	3434			1762			1797	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	293	62	36	312	77	48	25	21	112	42	446
RTOR Reduction (vph)	0	0	32	0	18	0	0	9	0	0	0	364
Lane Group Flow (vph)	304	293	30	36	371	0	0	85	0	0	154	82
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases				2								4
Actuated Green, G (s)	10.9	23.9	30.7	2.4	15.4			6.8			11.8	11.8
Effective Green, g (s)	10.9	23.9	30.7	2.4	15.4			6.8			11.8	11.8
Actuated g/C Ratio	0.17	0.37	0.48	0.04	0.24			0.11			0.18	0.18
Clearance Time (s)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.5	2.0	2.0			2.5			2.5	2.5
Lane Grp Cap (vph)	580	690	753	65	819			185			328	509
v/s Ratio Prot	c0.09	c0.16	0.00	0.02	0.11			c0.05			c0.09	
v/s Ratio Perm			0.01									0.03
v/c Ratio	0.52	0.42	0.04	0.55	0.45			0.46			0.47	0.16
Uniform Delay, d1	24.4	15.2	9.0	30.5	21.0			27.1			23.6	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.4	0.2	0.0	5.7	0.1			1.3			0.8	0.1
Delay (s)	24.8	15.3	9.0	36.2	21.1			28.4			24.3	22.3
Level of Service	C	B	A	D	C			C			C	C
Approach Delay (s)					22.4			28.4			22.8	
Approach LOS					C			C			C	
Intersection Summary												
HCM 2000 Control Delay				21.6		HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio				0.49								
Actuated Cycle Length (s)				64.5		Sum of lost time (s)		19.6				
Intersection Capacity Utilization				42.0%		ICU Level of Service		A				
Analysis Period (min)				15								
c Critical Lane Group												

Valley Center Rite Aid
2: Cole Grade Rd & Proj Dwy

Existing Plus Project
Timing Plan: AM Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		R			R
Volume (veh/h)	0	12	74	0	22	107
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	13	80	0	24	116
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)					250	
pX, platoon unblocked						
vC, conflicting volume	245	80			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	80			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			98	
cM capacity (veh/h)	732	980			1517	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	13	80	140			
Volume Left	0	0	24			
Volume Right	13	0	0			
cSH	980	1700	1517			
Volume to Capacity	0.01	0.05	0.02			
Queue Length 95th (ft)	1	0	1			
Control Delay (s)	8.7	0.0	1.4			
Lane LOS	A		A			
Approach Delay (s)	8.7	0.0	1.4			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization		23.5%		ICU Level of Service		
Analysis Period (min)		15			A	

Valley Center Rite Aid
3: Proj Dwy & Valley Center Rd

Existing Plus Project
Timing Plan: AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑		↑
Volume (veh/h)	388	4	0	391	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	422	4	0	425	0	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)	293					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume		426		636	424	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol		284		522	281	
tC, single (s)		4.1		6.8	6.9	
tC, 2 stage (s)						
tF (s)		2.2		3.5	3.3	
p0 queue free %		100		100	99	
cM capacity (veh/h)		1126		428	632	

Direction Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	426	212	212	5
Volume Left	0	0	0	0
Volume Right	4	0	0	5
cSH	1700	1700	1700	632
Volume to Capacity	0.25	0.13	0.13	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	10.7
Lane LOS				B
Approach Delay (s)	0.0	0.0		10.7
Approach LOS				B

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		30.7%	ICU Level of Service	A
Analysis Period (min)		15		

Valley Center Rite Aid
1: Cole Grade Rd & Valley Center Rd

Existing Plus Project
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	60	62	31	18	98	26	340
Volume (vph)	548	458	73	23	459	60	62	31	18	98	26	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	4.6	4.4	5.3				4.6		5.3	5.3
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95				1.00		1.00	0.88
Frt	1.00	1.00	0.85	1.00	0.98				0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00				0.97		0.96	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3478				1772		1792	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00				0.97		0.96	1.00
Satd. Flow (perm)	3433	1863	1583	1770	3478				1772		1792	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	596	498	79	25	499	65	67	34	20	107	28	370
RTOR Reduction (vph)	0	0	32	0	7	0	0	5	0	0	0	316
Lane Group Flow (vph)	596	498	47	25	557	0	0	116	0	0	135	54
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2									4
Actuated Green, G (s)	20.2	40.5	51.4	2.4	22.7			10.9			12.6	12.6
Effective Green, g (s)	20.2	40.5	51.4	2.4	22.7			10.9			12.6	12.6
Actuated g/C Ratio	0.23	0.47	0.60	0.03	0.26			0.13			0.15	0.15
Clearance Time (s)	4.4	5.3	4.6	4.4	5.3			4.6			5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.5	2.0	2.0			2.5			2.5	2.5
Lane Grp Cap (vph)	806	877	946	49	918			224			262	408
v/s Ratio Prot	c0.17	c0.27	0.01	0.01	0.16			c0.07			c0.08	
v/s Ratio Perm			0.02									0.02
v/c Ratio	0.74	0.57	0.05	0.51	0.61			0.52			0.52	0.13
Uniform Delay, d1	30.5	16.4	7.2	41.2	27.7			35.1			33.9	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	3.1	0.5	0.0	3.7	0.8			1.5			1.3	0.1
Delay (s)	33.6	16.9	7.2	44.9	28.5			36.6			35.2	32.1
Level of Service	C	B	A	D	C			D			D	C
Approach Delay (s)		24.7			29.2			36.6			32.9	
Approach LOS		C			C			D			C	

Intersection Summary

HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Valley Center Rite Aid
2: Cole Grade Rd & Proj Dwy

Existing Plus Project
Timing Plan: PM Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		P			↑
Volume (veh/h)	0	37	73	0	46	76
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	40	79	0	50	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						250
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	262	79			79	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	262	79			79	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			97	
cM capacity (veh/h)	703	981			1519	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	40	79	133
Volume Left	0	0	50
Volume Right	40	0	0
cSH	981	1700	1519
Volume to Capacity	0.04	0.05	0.03
Queue Length 95th (ft)	3	0	3
Control Delay (s)	8.8	0.0	3.0
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	3.0
Approach LOS	A		

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		23.2%	ICU Level of Service
Analysis Period (min)		15	A

Valley Center Rite Aid
3: Proj Dwy & Valley Center Rd

Existing Plus Project
Timing Plan: PM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑		↑
Volume (veh/h)	566	8	0	542	0	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	615	9	0	589	0	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (ft)	293					
pX, platoon unblocked		0.80		0.80	0.80	
vC, conflicting volume		624		914	620	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol		407		769	401	
tC, single (s)		4.1		6.8	6.9	
tC, 2 stage (s)						
tF (s)		2.2		3.5	3.3	
p0 queue free %		100		100	96	
cM capacity (veh/h)		920		271	480	

Direction Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	624	295	295	17
Volume Left	0	0	0	0
Volume Right	9	0	0	17
cSH	1700	1700	1700	480
Volume to Capacity	0.37	0.17	0.17	0.04
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	12.8
Lane LOS				B
Approach Delay (s)	0.0	0.0		12.8
Approach LOS				B

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		40.3%	ICU Level of Service	A
Analysis Period (min)		15		

